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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/033,512 | 12/27/2001 | Pramod V.N. Koppol | 2 | 8651 |

7590 05/31/2006

Docket Administrator (Room 3J-219)
Lucent Technologies Inc.,
101 Crawfords Corner Road
Holmdel, NJ 07733-3030

EXAMINER

LEVITAN, DMITRY

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2616

DATE MAILED: 05/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-----------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/033,512 | KOPPOL, PRAMOD V.N. | |
| | Examiner | Art Unit | |
| | Dmitry Levitan | 2616 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2006.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Amendment, filed 4/19/06, has been entered. Claims 1-4, 6-19 remain pending.

Drawings

In light of Applicant's amendment, the drawings received on 4/19/06 have been approved.

Specification

In light of Applicant's amendment, the objections to the disclosure have been withdrawn.

Claim Objections

In light of Applicant's amendment, the objections to the claims have been withdrawn.

Claim Rejections - 35 USC § 112

1. Claims 1-4 and 6-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 and 18 limitations "delegate port cards having selected software functionality of said (intra-AS in claim 18) link state routing protocol" are unclear, because it is not understood what portions of the link state routing protocol belong to the selected software, if the selected software is limited to processing LSA updates or not. Therefore it is unclear if the function of processing LSA is the criteria for the software selection or not.

Claim 14 recites the limitation "the processor" in line 10. There is insufficient antecedent basis for this limitation in the claim.

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Claims 15 and 16 recite the limitation "said processor" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 18 recites the limitation "the processor" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

2. Claims 1-4, 6-8, 10-17 are rejected (as best understood) under 35 U.S.C. 103(a) as being unpatentable over Akyol (US 6,529,481) in view of RFC 2328 version 2, OSPF protocol, 1998, pages 1-106.

3. Regarding claims 1, 2, 14 and 16, Akyol substantially teaches the limitations of the claims:

an apparatus and a method for communicating a link state routing protocol with nodes in a network (a distributed LSRP system 1:50-65, implemented as OSPF or IS-IS processes 1:57-60, comprising a node, shown on Fig. 4 and 5:17-30), comprising:

A controller having at least one processor associated therewith for performing route calculation and maintaining a link state database of said network (inherently part of the card 403 on Fig. 4, because a processor is essential for the card to perform Short Path first (SPF) routing calculations 5:17-30 based on maintained network topology base, known as Link State Database 3:34-40); and

At least one delegate port card coupled to said controller and having at least one separate processor associated therewith (inherently part of card 401 on Fig. 4, because a processor is essential for the card to perform topology updates 5:20-22) said delegate port card having

selected software functionality of said link state routing protocol assigned thereto (assigning a portion of the protocol related to the topology updates to one card 2:35-40) for performing the selected functionality of processing the links updates, said delegate port card operable to process communications associated with said selected software functionality substantially independently of said controller (cards 401 and 403 independently perform separate functions of updates and route calculation 5:18-30).

Akyol does not teach topological updates as Link State Advertisements (LSA).
RFC 2328 teaches topological updates as Link State Advertisements (LSA) on pages 7 and 8.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add topological updates as Link State Advertisements (LSA) of RFC 2328 to the system of Akyol to improve the system compatibility with popular RFC 2328 standard.

In addition, regarding claims 14 and 16, Akyol teaches a system performing OSPF operations including routing (OSPF operation 1:57-60), the cards connected with network by ports (ports shown on Fig. 1 and 3:27-34).

Akyol does not teach using a state machine in the controller.

Official notice is taken that state machines are well known in the controllers design.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add using a state machine in the controller to the system of Akyol as a design choice utilizing a popular method of controllers design.

4. Regarding claim 3, Akyol teaches updating said controller when a state change occurs (inherently sending all topological update messages to the SPF card 403, because the update of the link data base of the card 403 is essential for the routing operation of the system).

5. Regarding claims 4 and 15 (as best understood), Akyol teaches said port card is operable to distribute link state advertisements assigned thereto and to perform acceptance checks for said LSA served thereby (update card 401 inherently verifies/checks and distributes the received LSA to the link state data base, because the update card comprises bidirectional ports, shown on Fig. 1 and 3:27-40 and performs the update process 4:30-65).

6. Regarding claims 6, 8 and 17, Akyol teaches said delegate card is operable to perform refresh functionality for associated LSAs (comparing the LSAs of the active card 401 database with the backup card 405 database copies to synchronize the databases 5:25-30) and transmit/receive hello messages (transmitting and receiving hello messages 4:30-45).

7. Regarding claim 13, Akyol teaches preprocessing LSA updates from delegate port cards before sending them to the controller to save processing time by said controller (inherently part of the system, because the update card executes the update process before sending the updates to the SPF card 4:30-45 to perform the decision process 4:15-30).

8. Regarding claims 7 and 10, Akyol substantially teaches the limitations of the claim (see claims 1 and 14 rejection above) including forwarding/broadcasting the LSA/updates 1:50-65.

Akyol does not teach said port cards provide retransmission and acknowledgement service.

RFC 2328 teaches port cards provide retransmission and acknowledgement service (sending LSA acknowledgement packets on page 152 and retransmission on page 154).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize retransmission and acknowledgement service of RFC 2328 in the system of Akyol to implement all features/mechanism of well-known protocol OSPF.

9. Regarding claims 11 and 12, Akyol substantially teaches the limitations of the claim (see claims 1 and 14 rejection above) including synchronizing the active and standby cards.

Akyol does not teach flooding a tic timer to all delegate port cards and sending a delayed acknowledgement (after a given number of tics).

RFC 2328 teaches flooding mechanism and timers (flooding hello packets in Flooding procedure on page 96 and including timing in the LSA in Determining which LSA is newer on page 98), delayed LSA acknowledgements (sending LSA packets on Page 102).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize flooding of a tic timer of RFC 2328 to the system of Akyol to synchronize all the standby/delegate cards with the active card/controller (regarding claim 11).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize delayed LSA acknowledgements and LSA tics, used for LSA aging, of RFC 2328 in the system of Akyol to combine several acknowledgements in one LSA packet, as indicated in RFC 2328 on page 102 (regarding claim 12).

10. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Akyol in view of Admitted Prior Art (OSPF protocol overview disclosed on pages 1, 2, 4-8) and in view of RFC 2328.

Akyol substantially teaches the limitations of claim 18 (see claims 1 and 14 rejection above). Akyol does not teach OSPF as an intra-autonomous system protocol.

Admitted Prior Art teaches OSPF as an intra-autonomous system protocol (OSPF is a widely deployed intra-AS protocol 4:19-27).

RFC 2328 teaches topological updates as Link State Advertisements (LSA) on pages 7 and 8

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize OSPF as an intra-autonomous system protocol of Admitted Prior Art and LSA of RFC 2328 to the system of Akyol to implement OSPF protocol in intra-autonomous environment and make the system compatible with RFC 2328 standard.

11. Claims 9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akyol in view of Simpson (US 2002/0078232).

Akyol substantially teaches the limitations of the claim (see claims 1 and 18 rejections above) including synchronizing said controller and neighbor state machines as the basic of OSPF algorithm (2:15-25), and said controller and delegate port card are synchronized (active card 401 and standby card 405 are synchronized 5:25-30).

Akyol does not teach updating of said controller by said delegate port card upon a new event being generated for said neighbor finite state machine.

Simpson teaches updating of said controller by said delegate port card upon a new event being generated for said neighbor finite state machine (deactivating the backup link and return to the primary link on the primary link recovery, Abstract, wherein new event is an inherent message from the backup card to the recovered active card to reactivate it as a primary card and updating of the controller/active card is the return to the active state).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add updating of said controller by said delegate port card upon a new event being

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generated for said neighbor finite state machine of Simpson to the system of Akyol to improve the system flexibility by returning the recovered card into active service.

Response to Arguments

12. Applicant's arguments with respect to claims 1-4 and 6-19 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dmitry Levitan whose telephone number is (571) 272-3093. The examiner can normally be reached on 8:30 to 4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on (571) 272-7529. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'DL' followed by a stylized name.

Dmitry Levitan
Examiner
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